

REMARKS

This is in response to the Office Action mailed on October 4, 2005, and the references cited therewith.

Claim 30 was added, and claim 29 was cancelled. Claims 1-28 and 30 are now pending in this application.

Affirmation of Election

Restriction to one of the following claims was required:

- I. Claims 1-28, are drawn to event identification, classified in class 702, subclass 185.
- II. Claim 29, is drawn to a training module, classified in class 706, subclass 14.

As provisionally elected by Applicants representative, Bradley Forrest, on September 29, 2005, Applicant elects to prosecute the invention of Group I, claims 1-28.

The claims of the non-elected invention, claim 29, are hereby canceled. However, Applicant reserves the right to later file continuations or divisions having claims directed to the non-elected inventions.

§102 Rejection of the Claims

Claims 1-28 were rejected under 35 USC § 102(e) as being anticipated by Qin et al. (U.S. Patent No. 6,594,620). This rejection is respectfully traversed. Applicant reserves the right to swear behind Qin et al., at a later date. Qin et al., is directed at detecting bad sensors that are measuring a process. The presently claimed invention is directed at “identifying events in a process”. These are very different purposes, and the claims are believed to clearly distinguish the reference.

Claim 1 recites “determining if an event is occurring”. This event is related to the process, not specifically to identifying a bad sensor as in Qin et al. The Office Action indicates this element is in Qin et al., at Col. 3, lines 10-13. These lines “determine whether a detection alarm is due to one or more faulty sensors,...” and uses “a series of detectors are constructed

which are insensitive to one subset of faults but most sensitive to the others” to identify the offending sensor. This language clearly does not relate to an event in a process, but appears to refer to finding structured residuals that are not sensitive to one set of faults but more sensitive to others. This is an entirely different approach to a very different problem. It should be noted that the present application refers to events as process parameters being out of range in one or more parts of the process. The present claims are not directed specifically at identifying a bad sensor, but rather identifying an event in the process as stated in the preamble of each independent claim.

Claim 1 also recites “finding a nearest cluster of bad actors related to the event to identify the event.” The Office Action sites the same section of Qin et al., at Col. 3, lines 10-13 as describing this element. As seen from the above quoted language, it does not describe finding a cluster of bad actors related to a process event, but instead finds structured residuals to identify an offending sensor. Thus, Qin et al., is lacking at least two elements of independent claims 1 and 16.

Dependent claim 2 recites that clusters of bad actors are compared to known clusters in a library of clusters for bad actors. As known from claim 1, these clusters are related to process events. No such clusters are found in the language referenced in the Office Action, Qin et al., Col. 2, lines 60-63. Such language clearly refers to optimizing the reconstruction of faulty sensor values, not identifying events occurring in the process. As such, the element is not taught by Qin et al., and the rejection should be withdrawn.

Dependent claims 3-5 refer to sequences of cluster matches. The Office Action refers to Col. 6, lines 29-41 as describing this element. However, this language only refers to calculating diagnostic information as to the type of sensor fault. It does not deal with events in a process as claimed, and any time sequences are related to a sensor, not to sequences of clusters of bad actors as claimed. The Office Action also indicated that claim 4 is shown at Col. 19, lines 1-2 which recite: “Goodness of fit of the regression line is determined by the linear correlation coefficient exceeding a specified threshold.” Applicant fails to see how this language shows or suggests claim 4, which recites “determining if a cluster needs to be split when new bad actors are added; and splitting the cluster into two clusters using a goodness of fit algorithm.” The only correlation is the use of goodness of fit algorithm, but the algorithm is used in very different

manners. The language of Qin et al., clearly does not anticipate claim 4. Also, the reference to Qin et al., with respect to claim 5 does not appear to anticipate. Claim 5 refers to determining if new event categories are encountered and broadening limits for a sequence of clusters. Col. 5, lines 30-41 simply refers to calculating residuals and residual transforms. There is no discussion in the Office Action of how this seemingly unrelated language teaches any part of claim 5.

Similarly, language cited in Qin et al., with respect to claims 6-15 also appear to have little to do with the claimed invention since Qin et al., is directed to detecting faulty sensors, and not events in a process as claimed. Claims 17-28 which depend from claim 16, are similar to claims that depend from claim 1, and distinguish the reference for at least the same reasons.

As Qin et al., does is lacking one or more elements of the claims, a proper prima facie case of anticipation has not been established, and the rejections should be withdrawn.

New claim 30 has been added. It distinguishes from Qin et al., for at least the same reasons as claim 1. It further recites that events are determined as occurring “as a function of one or more process states being outside of normal range”. This element even more clearly distinguishes Qin et al., as it specifically refers to process states, not to sensors that are malfunctioning.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

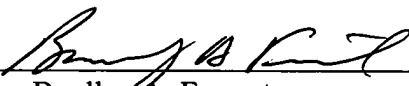
Respectfully submitted,

VALERIE GURALNIK ET AL.

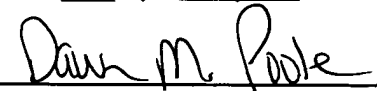
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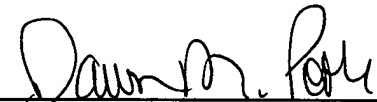
Date 1-4-2006

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